Volume 19 Study G-I-E

STATE OF ALASKA

Jay S. Hammond, Governor

Annual Performance Report for

INVENTORY AND CATALOGING OF SPORT FISH AND SPORT FISH WATERS OF THE BRISTOL BAY AREA

by

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Job NO. G-I-E

Inventory and Cataloging of Sport Fish and Sport Fish Waters of the Bristol Bay Area

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RESEARCH PROJECT SEGMENT

State: ALASKA NAME: Sport Fish Investigations of Alaska

Project No.: F-9-10

Study No.: G-I Study Title: INVENTORY AND CATALOGING

Job No.: G-I-E Job Title: Inventory and Cataloging of Sport Fish and Sport Fish Waters of the Bristol Bay Area.

Period Covered: July 1, 1977 to June 31, 1978.

ABSTRACT

The Bristol Bay area includes all waters flowing into Bristol Bay from Cape Newenham to Port Heiden. Research activities in the area are designed to monitor traditional fisheries and to expand studies into development of potentially important sport fisheries.

The 1977 sports harvest of chinook salmon, Oncorhynchus tshawytscha (Walbaum), was estimated to be 1,000 fish, with an escapement of over 10,000 in the drainage.

Rainbow trout, Salmo gairdneri Richardson, surveys were made on Copper River, Lower Talarik Creek, and Dream Creek in the Kvichak drainage and in Brooks and Naknek rivers in the Naknek system. An estimate was made of Naknek River rainbow trout harvested during late September and early October.

Dolly Varden char, Salvelinus malma (Walbaum), caught with rod and reel in the Naknek River, were tagged and measured in April and May, 1977. A size frequency of the fish tagged is presented.

In addition to an extensive survey of the Mulchatna River drainage, catalog and inventory surveys were made on Gertrude Creek, Ungalukthluk River, Copper River, and Ugashik River. Surveys on all systems were designed to determine fish present, their sizes, angler use, access to the system and float characteristics of the system. Waters surveyed in the Mulchatna system include the Stuyahok River, Koktuli River, Chilchitna River, Chilikadrotna River, Tutna Lake, Twin Lakes, and Fishtrap Lake.

BACKGROUND

The Bristol Bay area includes all waters flowing into Bristol Bay from Cape Newenham to Port Heiden. The area contains some of the best fishing waters within the State. While the Kvichak and Naknek drainages have traditionally been fished for many years, there is still the opportunity for expansion of the fishery into Bristol Bay area waters unknown to the general public. Many of the professional fishing guides and anglers with airplanes are doing this.

Therefore, it was considered important to expand the 1977 program into selected new areas while we continue to monitor the traditional fisheries. Emphasis was placed on the Mulchatna River system during this reporting period (Figure 1). Major rivers were floated, noting access, angler use, and fish populations present. Aerial surveys were also made to help determine angler use. In addition to the Mulchatna system surveys, several streams in other drainages not previously monitored were surveyed.

With a significant amount of angler effort expended on the Naknek River, an estimate of the 1977 chinook salmon catch and escapement was made for comparisons to previous years. A creel census estimate of rainbow trout harvested by sport anglers was made during late September and early October at Lake Camp on the Naknek. Dolly Varden were tagged and measured during the spring at Rapids Camp in hope of determining migration routes and degree of exploitation.

Rainbow trout spawning surveys were conducted again on selected streams in the Kvichak and Naknek drainages to estimate the number of spawning rainbow trout and to determine the minimum number of large rainbow trout available to angling pressure.

RECOMMENDATIONS

1. A formal Naknek River chinook salmon creel census should be initiated during 1978 to determine sport harvest and effort.

2. The tagging of Dolly Varden char in the Naknek River to determine distribution and degree of exploitation and the measurement of fish for size frequency should be continued.

3. The enumeration of chinook salmon and rainbow trout in selected streams in the Naknek and Kvichak drainages should continue in order to establish a minimum spawning escapement.

4. The survey of selected streams within the Bristol Bay area to determine the existence of, or the potential for, a recreational fishery should be continued and information collected about the fishes present.

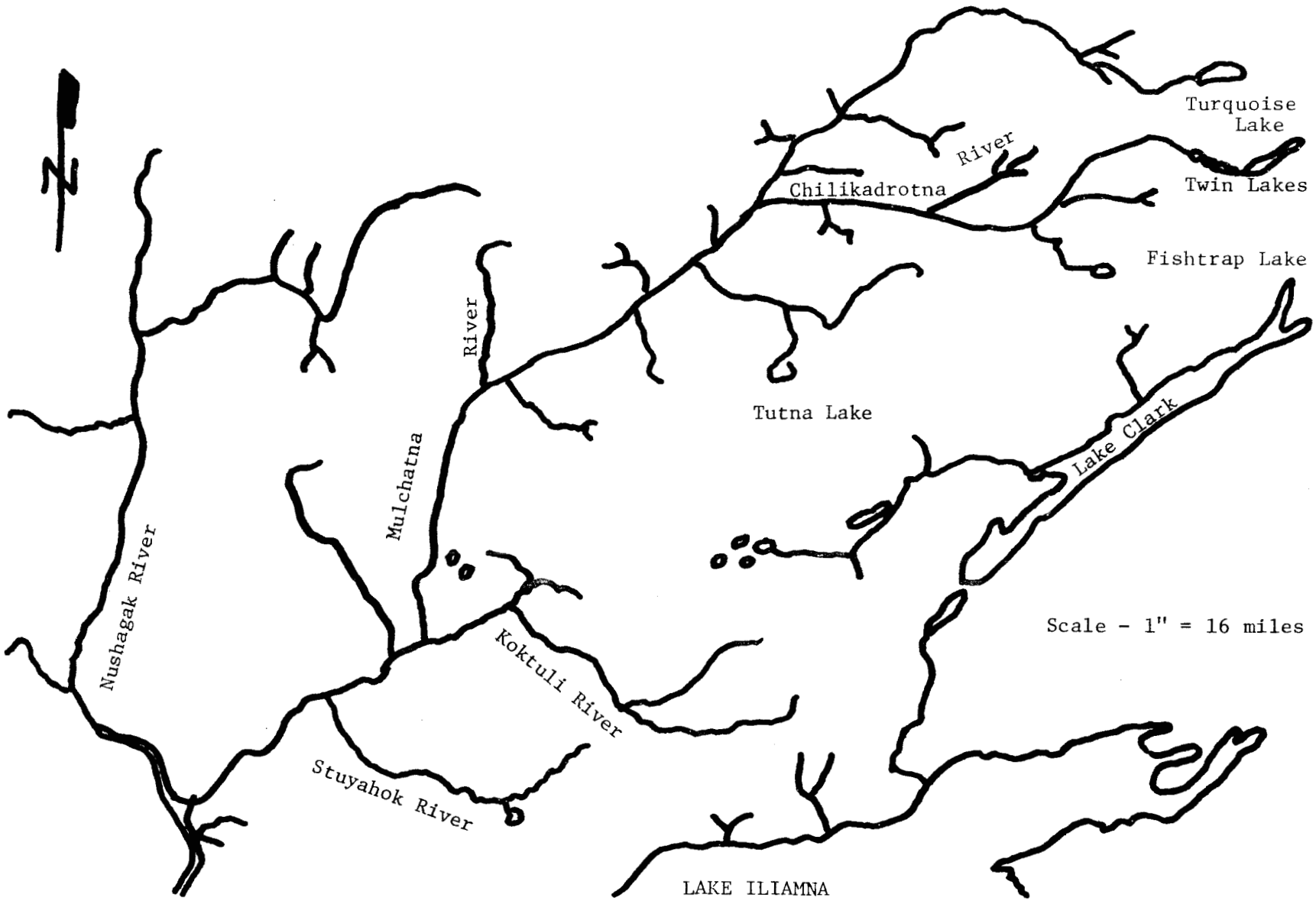

Figure 1. Mulchatna River Drainage showing systems surveyed during 1977.

OBJECTIVES

1. To determine the distribution and utilization of sport fish species within waters of the job area.

2. To determine the magnitude of selected spawning stocks within the job area.

3. To update information on the sport fish guiding industry in the job area, with emphasis on the Wood River, Ugashik, and Kvichak drainages.

4. To provide recommendations and identify future research needs relative to the management of area sport fish resources.

TECHNIQUES USED

The 1977 Naknek River chinook salmon recreational harvest was estimated based on almost daily observation of the fishery.

Numbers of chinook salmon were estimated by aerial surveys. An observer, with a pilot trained in stream surveying, flew each tributary near the peak of spawning and counted spawning chinook salmon. Chinook salmon were estimated in tens or hundred in areas of large concentrations.

Spawning ground counts for rainbow trout were obtained by walking along the banks and observing the fish.

Stream surveys were made to determine existence of rainbows and to measure pertinent related parameters utilizing hook and line, electro-sampling, and gill nets. Access to streams was by float plane, and streams were floated in Avon rafts.

Dolly Varden char were tagged with numbered, brown, FD-67 internal anchor tags made by the Floy Tag Company. The tags were inserted with Dennison Mark II tagging guns into the dorsal body musculature so that the anchor section of the tag lodged between consecutive pterygiophores.

Anglers were interviewed after they completed their fishing day to determine creel census information.

FINDINGS

Results

Naknek River Chinook Salmon:

The 1977 sports catch of chinook salmon, Oncorhynchus tshawytscha (Walbaum), was estimated to be 1,000 salmon. This estimate includes

Pauls Creek and Big Creek, as well as the main Naknek River. The estimate was based on personal observation and angler interviews. Table 1. summarizes the estimates of sports caught chinook in the Naknek since 1970.

Chinook salmon escapement estimates for the Naknek River system are presented in Table 1. Further, estimates of catch (including subsistence) and escapement for chinook salmon in the Naknek are also presented in Table 2.

Trout Surveys:

Results of stream surveys to enumerate spawning rainbow trout, Salmo gairdneri (Richardson), are presented in Table 3.

A summary of the 12-day creel census at Lake Camp on the Naknek River with emphasis on rainbow trout harvest is presented in Table 4. In 12 days, the 160 anglers caught approximately 512 rainbows and retained only 81, or 0.5 rainbow per angler. The average catch per hour was one rainbow, while the average rainbow catch per angler was 3.2 fish.

From approximately 70 measurements, a relationship between total length and fork length was computed. The linear regression that describes this relationship is:

$$Y \text{ (total length)} = 2.14 + 1.04 \text{ X (fork length)}$$

The r value of the relationship is 0.99.

The average total length of rainbows retained was 469 mm, or 18.5 inches, with a standard deviation of 127 mm, or 5 inches.

A seven-day creel census (September 12-18) was conducted at Lower Talarik Creek. Anglers were present at the stream four of the seven days, with a total of 59 fishermen observed. Fifty-seven were interviewed. Combined, they fished 283 hours, caught 142 rainbow trout (2.5 per person, and retained nine rainbows (one rainbow retained per each six anglers). The rainbow trout catch per hour was 0.5. Of the 142 rainbows caught, 43 were reported to have exceeded 20 inches in length. Only four of these 20-inch-plus fish were retained, indicating a very conservative angler attitude was prevalent at the stream.

Naknek River Dolly Varden Study:

Table 5 presents a length frequency of Dolly Varden, Salvelinus malma (Walbaum), captured by hook and line, tagged, and released at Rapids Camp on the Naknek River during April and May, 1977. Of the 149 releases, none have been returned through November, 1977.

Catalog and Inventory Surveys Outside Mulchatna Drainage

In addition to angler surveys made in the Mulchatna drainage, Gertrude Creek and the Ungalukthluk River were floated. Gertrude Creek is a

Table 1. Chinook Salmon Escapement Estimates, Naknek River System, 1970-1977*.

Year	King Salmon Creek	Big Creek	Pauls Creek	Mainstem Naknek River	Estimated Total (Mid-Point)
1970	260	1,600	No Count	2,500	4,360
1971	704	490	52	1,620	2,866
1972	1,224	1,060	156	351	2,791
1973	115	1,106	No Count	1,300-1,600	2,671
1974	600-800	1,200-1,300	250	400-500	2,650
1975	350-400	800-850	200-250	2,250-2,750	3,925
1976	350-450	1,300-1,500	75-125	7,000-7,500	9,150
1977	2,200-2,500	2,600-2,800	No Count**	5,500-6,000	10,800

* Aerial Surveys
** High Water

Table 2. Estimated Harvest and Escapement of Chinook Salmon in the Naknek River System, 1970-1977.

Year	Estimated Sports Catch	Estimated Subsistence Harvest	Estimated* Escapement	Total (Total Run Size Exclusive of Commercial Harvest)
1970	2,730***	300	4,360	7,390
1971	2,417***	200	2,866	5,483
1972	1,668***	400	2,791	4,859
1973	1,000	600	2,671	4,271
1974	1,700	900	2,650	5,250
1975	427***	600	3,925	4,952
1976	800	700	9,150	10,650
1977	1,000	1,200**	10,800	13,000

* Includes all tributary streams surveyed.
** Preliminary
*** Estimate based on a formal creel census

Table 3. A Summary of Rainbow Trout Spawning Surveys Made on Several Streams in the Naknek and Kvichak Drainages, 1972-1977.

Stream	Number of Rainbow Trout					
	1972	1973	1974	1975	1976	1977
Copper River	630	102	91	85	*	400-450
Brooks River	No Survey	150	169	88	100	125-175
Lower Talarik Creek	600	1,000	1,200	1,100	1,000	800
Dream Creek	No Survey	218	43	46	200-250	138
Naknek River**	260	130	No Survey	500	300-500	300-500

* No count possible due to turbid waters.
** Aerial Surveys used on Naknek River.

Table 4. A Summary of Rainbow Trout Harvest and Sport Fishing Effort From Lake Camp on the Naknek River Between September 30 and October 15, 1977.

Date	Anglers Checked	Hours Fished	Rainbow Caught	Rainbow Kept
9-30	22	75	78	5
10-1	25	108	111	9
10-2	15	85	50	14
10-3	12	56	33	13
10-5	12	24	40	2
10-6	7	6	0	0
10-7	20	72	63	13
10-8	13	20	3	1
10-9	21	66	95	23
10-11	9	23	37	0
10-14	0	0	0	0
10-15	4	4	2	1
Total	160	539	512	81

Table 5. A Length Frequency of Naknek River Dolly Varden Tagged at Rapids Camp During April and May, 1977.

Total Length in mm	Frequency	Total Length in mm	Frequency
286-290	1	411-415	4
291-295	1	416-420	7
296-300	-	421-425	6
301-305	1	426-430	7
306-310	1	431-435	4
311-315	-	436-440	4
316-320	-	441-445	7
321-325	4	446-450	5
326-330	3	451-455	3
331-335	2	456-460	8
336-340	3	461-461	-
341-345	2	466-470	1
346-350	4	471-475	3
351-355	5	476-480	2
356-360	6	481-485	1
361-365	7	486-490	5
366-370	3	491-495	3
371-375	2	496-500	-
376-380	2	501-505	3
381-385	4	506-510	-
386-390	1	511-515	4
391-395	4	516-520	-
396-400	2	521-525	-
401-405	5	526 and over	5
406-410	4		

tributary of the King Salmon River. It was surveyed June 5-7. Neither anglers nor evidence of recent sport angling activity were observed.

Rainbow trout, Arctic grayling, Thymallus arcticus (Pallus), and Arctic char, S. alpinus (Linnaeus), were captured in the stream with hook and line. Their length distributions are presented in Table 6.

Rainbow trout caught ranged in age from 6 to 10 years and were considered resident fish as they did not exhibit anadromous growth characteristics on scales.

The Ungalukthluk River, which empties into Togiak Bay to the east of Togiak River, was surveyed aerially on May 24. Spawning rainbow trout were observed in the interconnecting stream between the two large lakes about 15 miles upstream from the river mouth. In addition, scattered spawners were observed downstream, and an estimated 150 spawners were observed during the survey under less than optimal viewing conditions. The river in its lower reaches was quite murky due to tundra run-off.

A follow-up trip was made to the river May 31 to June 1. Using hook and line at the outlet of the lower lake, seven rainbow trout were caught, ranging in fork lengths from 335 to 655 mm. Of these, four were spawners and three were immature. Ages of these fish ranged from four years (335 mm) to 11 years (655 mm). Northern pike, Esox lucius Linnaeus, (lengths 395-910 mm), round whitefish, Prosopium cylindracium (Pallus), (lengths 373-455 mm), and Arctic grayling (lengths 305-457 mm) were also captured using hook and line and gill nets.

A three-day survey of the Copper River sport fishery was made August 23-25. Local guides utilizing the river were interviewed, and two days were spent making visual observations along the river. According to the guides, angler use has remained at a low level on the river the past three years due, in part, to Department efforts to direct angling pressure elsewhere. It is the opinion of the guides that the fishery is beginning to improve after the very depressed years of 1973, 1974, and 1975. Visual observations and some hook and line captures indicated abundant sub-adult rainbow trout in the river.

A two-day check of the Ugashik River at the outlet of Lower Ugashik Lake was made August 29-30. Five anglers were observed fishing, primarily for grayling and Arctic char. Both species were very abundant in the upper river. In addition, all five species of Pacific salmon were present, as were lake trout, Salvelinus namaycush (Walbaum), and Dolly Varden.

Rainbow Trout Tag Recoveries

During 1977, six previously tagged Kvichak drainage rainbow trout were recaptured. Five were tagged originally in the Gibraltar River system and one was tagged at Lower Talarik Creek. A listing of these fish follows:

Tag No.	Location and Date Tagged	Location Date Recaptured
Brown 14745	L. Talarik Creek, Sept., 1974	L. Talarik Creek, Jan., 1977
Green 07283	Dream Creek, June, 1973	Gibraltar River, July, 1977
Green 07283	Dream Creek, June, 1973	Gibraltar River, Sept., 1977
Green 07440	Gibraltar River, Sept., 1974	Gibraltar River, Sept., 1977
Green 07459	Gibraltar River, Aug., 1974	Kvichak River, Sept., 1977
Green 07478	Gibraltar River, Aug., 1974	Gibraltar River, Sept., 1977

These recoveries bring the recapture percentages of tagged Lower Talarik Creek and Gibraltar River rainbow trout to 13.3% (913 recovered from 6,846 tagged) and 12.9% (54 recovered from 417 tagged). Tag number 07283 green was also recaptured once in 1973, so this fish survived three hook and releases.

Ugashik Grayling Tag Recovery

One Ugashik grayling tag was recovered during 1977. This fish was tagged at Ugashik Narrows in August, 1972 and was recaptured at Ugashik Narrows during September, 1977. Over that five-year time span, this fish grew from 367 to 533 mm in fork length and its weight increased from 1.5 to 4.2 pounds. It was 10 years old at recapture.

Catalog and Inventory Surveys in Mulchatna Drainage

Nineteen species of fish were captured in the Mulchatna drainage and a summary of their distribution is presented in Table 7. A summary of survey results is presented in Table 8. Length frequencies for rainbow trout and grayling by tributary are presented in Tables 9 and 10, and a drainage wide age-length frequency for Mulchatna rainbow trout is presented in Table 11 The results of aerial surveys conducted to pinpoint angler use areas along the drainage are presented in Table 12.

Information regarding angler use, stream characteristics, and access is presented by river as follows:

Stuyahok River:

Angler Use

Four anglers were observed fishing near the confluence of the Stuyahok and Mulchatna rivers during our initial float survey (June 20-24). In addition, the air taxi operator that picked us up at the mouth of the river reported dropping seven anglers off at that location the previous week. Recent campsites, footprints, and lost lures were observed in the lower three miles of river, confirming recent angling use. Chinook salmon, rainbow trout, and grayling were the species sought at this time. A later

Table 6. A Length Frequency of Fish Caught in Gertrude Creek Between June 5 and June 7, 1977.

Fork Length (mm)	Rainbow Trout	Arctic Grayling	Arctic Char
300-324	-	8	-
325-349	-	20	-
350-374	-	27	-
375-399	1	17	-
400-424	3	5	-
425-449	3	-	-
450-474	8	-	-
475-499	2	-	1
500-524	3	-	-
525-549	2	-	1
Total	22	77	2
Range	412-535	300-422	407-536

Table 7. Fish Species Distribution, Mulchatna River System, June-September, 1977.

Species	Scientific Name	Stuyahok River	Koktuli River	Chilchitna River	Chilikadrotna River	Twin Lakes	Fishtrap Lakes
Rainbow trout	Salmo gairdneri (Richardson)	X	X	X	X	-	-
Arctic grayling	Thymallus arcticus (Pallas)	X	X	X	X	X	-
Dolly Varden	Salvelinus malma (Walbaum)	X	X	X	X	X	X
Arctic char	Salvelinus alpinus (Linnaeus)						
Northern pike	Esox lucius Linnaeus	X	X	X	-	-	-
Lake trout	Salvelinus namaycush (Walbaum)	-	-	-	X	X	X
Humpback whitefish	Coregonus pidschian (Gmelin)	X	-	-	-	-	-
Round whitefish	Prosopium cylindraceum (Pallas)	X	X	X	X	X	X
Chinook salmon	Oncorhynchus tshawytscha (Walbaum)	X	X	X	X	-	-
Coho salmon	Oncorhynchus kisutch (Walbaum)	X	X	X	X	-	-
Chum salmon	Oncorhynchus keta (Walbaum)	X	X	X	X	-	-
Sockeye salmon	Oncorhynchus nerka (Walbaum)	X	X	X	X	-	X
Pink salmon	Oncorhynchus gorbuscha (Walbaum)	-	-	X	-	-	-
Burbot	Lota lota (Linnaeus)	-	-	X	X	-	-
Least cisco	Coregonus sardinella (Valenciennes)	X	-	-	-	-	-
Longnosed sucker	Catostomus catostomus (Forster)	X	X	-	-	-	-
Arctic lamprey	Lampetra japonica (Martens)	-	-	X	-	-	-
Ninespine stickleback	Pungitius pungitius (Linnaeus)	X	X	-	-	-	-
Sculpins	Cottus sp.	X	X	X	X	-	X

Table 8. Results of Stream-Lake Surveys, Mulchatna River Drainage, June-September, 1977.

Stream	Date	Miles Surveyed	Species Captured	Number Captured	Fork Length Range (mm)
Stuyahok River	6/20-24	38	Rainbow trout	42	294-490
	8/16-23	1-2	Grayling	83	18-422
			Dolly Varden	13	128-555
			Northern pike	4	568-594
			Humpback whitefish	5	292-379
Koktuli River	7/5-12	46	Rainbow trout	60	262-519
	9/1-5	1-2	Grayling	192	203-436
			Dolly Varden	26	37-495
			Northern pike	1	559-
			Round whitefish	1	115-
Chilchitna River	7/19-23	25	Rainbow trout	6	304-470
and Tutna Lake	8/7	-	Grayling	16	105-362
			Dolly Varden	1	57-
			Northern pike	12	132-690
			Burbot	3	168-239
Chilikadrotna River	8/2-6	62	Rainbow trout	19	28-489
			Grayling	25	274-419
			Dolly Varden	9	49-182
			Lake trout	3	386-506
			Burbot	1	337
Twin Lakes	7/19-20	-	Grayling	9	283-468
	8/1-2	-	Dolly Varden	7	262-461
			Lake trout	12	324-436
			Round whitefish	14	318-419
Fishtrap Lake	7/27-28	-	Dolly Varden	6	304-417
			Lake trout	12	360-729
			Round whitefish	16	267-400

Table 9. Length Frequencies of Rainbow Trout Captured During 1977 in the Mulchatna River Drainage.

Fork Length Range (mm)	Stuyahok River		Koktuli River	Chilchitna River	Chilikadrotna River		Total
	H & L*	Net**	H & L	H & L	H & L	E.S.***	
25-49	-	-	-	-	-	3	3
50-74	-	-	-	-	-	-	-
75-99	-	-	-	-	-	1	1
100-124	-	-	-	-	-	-	-
125-149	-	-	-	-	-	-	-
150-174	-	-	-	-	-	-	-
175-199	-	-	-	-	-	-	-
200-224	-	-	-	-	-	-	-
225-249	-	-	-	-	1	-	1
250-274	-	-	1	-	3	-	4
275-299	1	-	1	-	-	-	2
300-324	2	-	4	1	2	-	9
325-349	6	-	8	2	-	-	16
350-374	8	-	10	1	-	-	19
375-399	7	1	7	-	3	-	18
400-424	4	1	8	-	2	-	15
425-449	6	-	6	-	3	-	15
450-474	2	-	6	2	-	-	10
475-499	4	-	5	-	1	-	10
500-524	-	-	4	-	-	-	4
Total	40	2	60	6	15	4	127
Mean Length (mm)	391	-	399	378	359	-	-

* Hook and Line
** Variable mesh gillnet
*** Electroshock

Table 10. Length Frequencies of Arctic Grayling Captured During 1977 in the Mulchatna River Drainage.

Fork Length Range (mm)	Stuyahok River		Koktuli River	Chilchitna River	Chilikadrotna River	Twin Lakes		Total
	H&L*	Net**	H&L	H&L	H&L	H&L	Net	
0-24	-	-	-	-	-	-	-	-
25-49	-	-	-	-	-	-	-	-
50-74	-	-	-	-	-	-	-	-
75-99	-	-	-	-	-	-	-	-
100-124	-	-	-	1	-	-	-	1
125-149	-	-	-	-	-	-	-	-
150-174	-	-	-	-	-	-	-	-
175-199	2	-	-	-	-	-	-	2
200-224	1	-	1	-	-	-	-	2
225-249	7	1	-	-	-	-	-	8
250-274	1	-	8	1	1	-	-	11
275-299	5	1	13	2	4	-	1	26
300-324	18	-	18	6	2	-	-	44
325-349	16	2	44	3	5	-	-	70
350-374	14	5	49	3	6	-	5	82
375-399	1	2	33	-	4	-	-	40
400-424	-	2	24	-	3	1	-	30
425-449	-	-	2	-	-	-	1	3
450-474	-	-	-	-	-	-	1	1
Total	65	13	192	16	25	1	8	320
Mean Length (mm)	308	352	353	306	349	-	375	-

* Hook and line
** Variable mesh gillnet

Table II. Age Length Frequency of Mulchatna River Drainage Rainbow Trout, June 20-September 5, 1977.

Fork Length Range (mm)	Age Group										Total
	0	I	II	III	IV	V	VI	VII	VIII	IX	
25- 49	3	-	-	-	-	-	-	-	-	-	3
50- 74	-	-	-	-	-	-	-	-	-	-	-
75- 99	-	1	-	-	-	-	-	-	-	-	1
100-124	-	-	-	-	-	-	-	-	-	-	-
125-149	-	-	-	-	-	-	-	-	-	-	-
150-174	-	-	-	-	-	-	-	-	-	-	-
175-199	-	-	-	-	-	-	-	-	-	-	-
200-224	-	-	-	-	-	-	-	-	-	-	-
225-249	-	-	-	1	-	-	-	-	-	-	1
250-274	-	-	-	3	1	-	-	-	-	-	4
275-299	-	-	-	1	1	-	-	-	-	-	2
300-324	-	-	-	2	5	2	-	-	-	-	9
325-349	-	-	-	1	11	2	-	-	-	-	14
350-374	-	-	-	2	5	7	2	-	-	-	16
375-399	-	-	-	-	4	3	7	2	1	-	17
400-424	-	-	-	-	1	7	1	2	2	-	13
425-449	-	-	-	-	-	2	3	2	3	-	10
450-474	-	-	-	-	-	-	1	1	2	1	5
475-499	-	-	-	-	-	-	1	1	2	-	4
500-524	-	-	-	-	-	-	-	1	2	1	4
Total	3	1	0	10	28	23	15	9	12	2	103
Meean Length (mm)	29	-	-	299	341	383	403	434	451	-	-
Mean Growth Increment (mm)	-	-	-	42	42	20	31	17	-		-

Table 12. A Summary of Angler Activities Observed on the Mulchatna River System as Determined from Aerial Surveys.

Date	Time	Area Surveyed	Activities Observed
June 13	12:00 Noon	Mouth of Stuyahok to mouth of Chilikadrotna	2 planes on Mulchatna - no anglers
June 21	9:00 a.m.	Stuyahok River	None
		Mulchatna from mouth of Stuyahok to mouth of Koktuli	Guide's camp at mouth of Koktuli
		Koktuli River	None
June 27	3:00 p.m.	Mouth of Mulchatna mouth of Stuyahok	None
		Stuyahok River	None
		Mulchatna from mouth of Stuyahok to mouth of Koktuli	Guide's camp with 1 float plane, 7 people and 2 skiffs
		Mouth of Koktuli to mouth of Chilikadrotna	None
July 8	3:00 p.m.	Upper Mulchatna to mouth of Koktuli	None
		Koktuli mouth to Stuyahok mouth	4 tents at guide's camp, 3 float planes, 2 boats, and 7 persons.
		Stuyahok mouth to Mulchatna mouth	1 boat with 2 persons
August 4	11:00 a.m.	Mouth of Mulchatna to mouth of Koktuli	1 tent at guide's camp

eight-day creel census was conducted (August 16-23) at the mouth of the river during the period in which coho salmon, Oncorhynchus kisutch (Walbaum), were upmigrating. Anglers were observed on four of the eight days with a total of 17 anglers ultimately observed. Of 15 anglers interviewed, 13 were nonresidents and two were residents. All were guided. They fished primarily for coho salmon (40 caught, 9 retained), but also caught rainbow trout, Arctic char, grayling, and northern pike. Based on the limited information available from these surveys, it appears the majority of present angling effort in the Stuyahok River drainage occurs within 3-5 miles of the Stuyahok-Mulchatna River confluence.

Access

There are several small lakes in the headwaters of the Stuyahok River that are suitable for float plane landings. We initiated the float survey from a lake located at approximately 59° 40' N. Lat. and 156° W. Long. Portages of up to one mile are necessary to reach the river from several of these lakes, but they do provide suitable access for day fishing in the upper river or for the initiation of float trips. Below these lakes, there is little float plane access to the river corridor until one reaches the Mulchatna-Stuyahok confluence. Single engine float planes are commonly landed in the Mulchatna River near this confluence. There are no recommended wheel strips in the area, although at low water some river bars might be usable. The river is also accessible by boat from downstream villages.

Float Characteristics

The Stuyahok River is a relatively easy three day float. The river drops approximately 230 feet in 38 miles (6 ft./mile). There are no rapids. The main channel is seldom less than 100 feet in width but spruce sweepers are common and log jams, especially in the lower river, require that one not get too complacent in guiding one's craft. The river is too deep to wade in hip boots throughout most of its length. The lower 30 miles of river winds through a forested corridor with small hills visible from the river. This river would rank high in wilderness aesthetics.

Koktuli River:

Angler Use

Seven anglers were observed within the lower 12 miles of the Koktuli River during the initial float survey of the river (July 5-12). All seven were guided nonresidents primarily fishing for chinook salmon. A number of other float planes landed on or near the lower river during the float survey, but were not present when we reached the downriver area. A five-day creel census was conducted at the mouth of the river (September 1-5). No anglers were observed using the lower river during that time.

Access

Access in the upper areas of the Koktuli drainage is limited to a few small lakes suitable for the landing of small float planes. The July float survey

was initiated from one such lake located at approximately 59° 47' N. Lat. and 155° 41' W. Long. Downstream from these lakes, suitable access is lacking until one reaches the Swan River-Koktuli confluence. There are several small lakes tributary to, or near, the Swan River within three miles of this confluence that are suitable for initiating short float trips of the remaining 10-12 miles of the Koktuli. The Mulchatna River, near its confluence with the Koktuli, is suitable for single engine float plane landings, thus making the lower several miles of river accessible. The river may also be reached from downriver by skiff.

Float Characteristics

The Koktuli River is similar to the Stuyahok River in many ways. There are no rapids as such. The river drops approximately 375 feet in 46 miles (8 ft./mile). Spruce sweepers and log debris piles are common. The main river is deep and clear. Side channels are quite common. These are wadeable in some places with hip boots. The Koktuli is a good four to six day wilderness float through a forested valley with an open surrounding tundra regime. With reasonable caution, any obstacles along its length can be avoided.

Chilchitna River Drainage:

Angler Use

The only angler activity observed during a float survey of portions of this drainage (July 19-23) was some pike fishing in Tutna Lake by a U.S.G.S. employee while stationed at a temporary camp there. No evidence of previous recreational activity was noted.

Access

Tutna Lake and a couple of smaller lakes located approximately five miles downstream (near Nikadavna Creek) are potential landing sites for float planes. Tutna Lake is suitable for twin engine amphibious aircraft use. Other than at these locations, access to the river corridor is scarce. The confluence of the Chilchitna and the Mulchatna rivers is accessible by boat from downriver, and approximately one mile downstream from this confluence, there is a straight stretch in the Mulchatna suitable for single engine float plane landings.

Float Characteristics

The Chilchitna River and Nikadavna Creek are both fairly small, clear water courses. Nikadavna Creek ranges from 15-30 feet in width while the Chilchitna River varies from 50 to 100 feet in width. Both, however, will support a 12-foot Avon raft with only minor difficulties. It is about a seven hour float from Tutna Lake down Nikadavna Creek to the Chilchitna River. The creek is slow and meanders a good deal through marshy upland tundra. It's too deep to wade throughout its upper five miles, but gets shallower father downstream. The Chilchitna River has

no rapids, but does have lots of sweepers and occasional trees completely across the river. Log jams are fairly common. The Mulchatna River at the Mulchatna-Chilchitna confluence is large and can be swift depending on recent levels of precipitation so caution should be exercised while traveling down it to a pick-up location.

Chilikadrotna River:

Angler Use

There were no anglers observed during an August 2-6 float survey of the Chilikadrotna River. However, evidence of recent previous travelers on the river (campsites, foot prints) was fairly common. The river is popular with recreational float enthusiasts who, during their trips, generally sport fish.

Access

The Twin Lakes are the source of the Chilikadrotna and provide the best access point in its drainage. Lower Twin Lake is suitable for landing all standard types of float planes. Along the river corridor there are a couple of much smaller lakes that could provide access to portions of the river. Each of these requires a portage of at least a mile to reach the river. The mouth of the river can be reached by boat from other points down the Mulchatna and Nushagak Rivers, but it is a long trip. There is no recommended spot for a float plane pick-up in the vicinity of the Mulchatna-Chilikadrotna confluence. However, 12-13 miles down the Mulchatna below the confluence there is a suitable straight stretch for float plane use. This stretch is located about one mile downstream from the Chilchitna-Mulchatna confluence and can be reached in about three to four hours of floating from the Chilikadrotna.

Float Characteristics

The Chilikadrotna River drops approximately 1,130 feet in 62 miles (18 ft/mile). Most of this gradient occurs in the upper 35-40 miles of river below Twin Lakes. Small to medium sized rapids are common. There are no large drops, but three to four foot hydraulics are common in some of the midriver rapids stretches. One desiring to avoid the hydraulics could easily line a raft or maneuver around them. Sweepers are again common, as are piles of log debris. Uprooted trees in mid-stream, especially in the lower river, could pose a hazard to the unwary. One individual drowned on the river this summer and another rafting accident was reported, so this is not a river to be taken lightly. The Chilikadrotna is large (100-200 feet in width), swift, and the water is at times somewhat turbid. There are lots of side channels and some of these are wadeable in hip boots. The main channel is not. The river corridor is forested throughout. There is one cabin visible from the river near Lower Twin Lake.

DISCUSSION

The 1977 Naknek River chinook salmon season started earlier than normal with the first chinook landed from the lower river during the last week of May. Fish were considerably larger than previous years, with significantly fewer jacks in the catch.

Pauls Creek was fished primarily from the VOR site, located one mile upstream of the highway bridge to the bridge, and Big Creek was fished from the confluence with the Naknek River upstream approximately four miles. Fishing was good in both streams after July 1.

Fishing continued good for bright fish through the July 18 closure. In fact, on July 17 the largest chinook for this area was caught at the mouth of Smelt Creek in the Naknek River. It weighed 66 pounds.

Sport fishing effort by the Military was less in 1977 than the previous year, with 13 boats operating from the base dock. Only one professional fishing guide operated on the river. Finally, the number of German fishermen was 68, probably a few more than last year.

The 1977 Naknek River chinook salmon escapement was significantly greater than in 1976, particularly considering Pauls Creek was not surveyed. With the increased number of chinook salmon in the river, the subsistence catch (Table 2) increased dramatically, surpassing the sports catch by approximately 200 fish.

Rainbow trout spawning surveys showed an increase in Copper River to nearly the early 1970 levels. This increase may be attributed to recruits into the spawning population from the early large escapements and somewhat reduced angler effort. Brooks River, Lower Talarik Creek, Dream Creek, and Naknek River showed very little change in number of spawning adult rainbows compared to the previous five years.

With regard to the 12-day rainbow trout creel census at Lake Camp on the Naknek River, it is noteworthy that anglers release most of their catch. Since rainbows are taken by trolling and/or drifting flies or lures in this area, most of the fish retained probably are those that were deeply hooked and would have died if released. Personal fishing experience in the area indicates that about one in four hooked on a lure or fly with a single hook are hooked in the gills or deeper.

In addition to rainbows, a few char, lake trout, grayling, and an occasional silver salmon were caught.

The Mulchatna River drainage supports a variety of fish species desirable to anglers. Chinook and coho salmon, along with rainbow trout, grayling and char, appear to be the species most sought by anglers utilizing the area. The heaviest angler traffic appears to occur in the lower river area near the mouths of the Koktuli and Stuyahok rivers and extends up these rivers for several miles. Much of the drainage is not easily accessible to the day fisherman. This serves to limit angling pressure in the upper areas.

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